



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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GOVERNOR

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November 26, 2007

Mr. Pete Larkin
Tensar International Corporation
453 Lake Shore Drive
Sunset Beach, NC 28468

Subject: Conditional Approval of Tensar's Ares Retaining Wall System

Dear Mr. Larkin:

The Geotechnical Engineering Unit (GEU) has conditionally approved Tensar's Ares Retaining Wall System for use on North Carolina Department of Transportation (NCDOT) projects in accordance with the "NCDOT Policy for Mechanically Stabilized Earth Retaining Walls". Conditionally approved mechanically stabilized earth (MSE) retaining wall systems are subject to the restrictions listed in the NCDOT MSE Retaining Wall Policy. This policy also includes requirements for attaining full approval of MSE wall systems and may be obtained from: <http://www.ncdot.org/doh/preconstruct/highway/geotech/msewalls/>

The Tensar Ares Retaining Wall System has been updated since the *Evaluation of The Tensar Ares Retaining Wall System* by the Highway Innovative Technology Evaluation Center (HITEC) was published in 1997. One of the updates is that Tensar currently uses UX****MSE geogrids instead of the geogrids submitted for the HITEC report. Tensar submitted material property data sheets, test results, reduction factors and coefficients for the UX****MSE geogrids. Based on this information, Tensar UX1100MSE or better reinforcement is required for use with Tensar's Ares Retaining Wall System.

Another update is regarding how the reinforcement is connected to the precast concrete panels. Tensar currently uses geogrid tabs cast into the back of the panels instead of the narrow slots cast into the back of the panels submitted for the HITEC report. The tabs are connected to the reinforcement with a bodkin connection and a high-density polyethylene (HDPE) bar. Tensar submitted test results and connection strength data for the connection and a material certification for the bar. While NCDOT's Standard Mechanically Stabilized Earth Retaining Walls Special Provision prohibits splices in the reinforcement, the bodkin connection just behind the panels

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between the geogrid reinforcement and tabs is not considered a splice and will be allowed based on the information submitted. The provision may be obtained from:
<http://www.ncdot.org/doh/preconstruct/highway/geotech/provnote/>

The Ares HDPE bodkin bar is required and defined as a miscellaneous component in accordance with the MSE Retaining Walls Special Provision.

If you have any questions, I can be reached at (919) 250-4088.

Sincerely,



Njoroge W. Wainaina
State Geotechnical Engineer

cc: K. J. Kim, Ph.D., P.E., Eastern Regional Geotechnical Manager (w/ submittal)
John Pilipchuk, L.G., P.E., Western Regional Geotechnical Manager (w/ submittal)
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